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AUTHOR	Windham, Douglas M.
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ABSTRACT

This speech examines alternative means of financing higher education within the context of how they affect both the equity of opportunity for such education and the efficiency of societal investment. According to the author, the system of higher education is inherently inequitable. The manner in which a financing program of full-cost tuition and long-term loans can minimize this inequity, as well as the long-term inequities while maximizing both social and private efficiency, is developed. Illustrative statistics from North Carolina are utilized, but conclusions are derived in terms of any public higher educational system. (Author)

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THE EFFICIENCY/EQUITY QUANDARY AND HIGHER EDUCATIONAL FINANCE

by

Douglas M. Windham
Associate Professor of Economics
University of North Carolina - Greensboro

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THE EFFICIENCY/EQUITY QUANDARY AND HIGHER EDUCATIONAL FINANCE[1]

INTRODUCTION

Historically, the views of advocates of public education could be categorized as either emphasizing egalitarian motives or the need for efficiency[2]. The egalitarian motive is manifested by those who support subsidized education as a means for reducing the inequality in the supply of educational opportunities to "disadvantaged" segments of society. The emphasis upon the efficiency criterion is maintained by those who believe in the existance of substantial social benefits in the higher educational process. They assert that public subsidies of the process are necessary if private benefits and costs are to be in line with societal (social and private) benefits and costs.

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1 The original impetus for this paper came from T. W. Schultz,"Optimal Investment in College Instruction: The Efficiency-Equity Quandary," presented to the COBRE Workshop, Chicago, Illinois, June 7-10, 1971. It will appear in the May/June special issue of the Journal of Political Economy. This paper is not presented as a substitute for Schultz's formulation of the "quandary" but as an attempt to present an operational form for further study of it.

2 See Gary S. Becker, "Human Capital and the Personal Distribution of Income: An Analytical Approach," W. S. Woytinsky Lecture No. 1, Ann Arbor: University of Michigan, Department of Economics, 1967.

The efficiency argument also specifically concerns itself with the "rate of return" to public investment in education. An implicit assumption is that the rate of return is a function of variations in the capacities of different individuals to benefit from higher education. Thus, the student from a favored social background might be selected for admission over another less-favored student because of the quite rational premise that the first student's background is more conducive to the production of social benefits given a certain level of public educational investment. When one considers the fact that cost itself becomes a variable when educating students from certain minority/poverty groups (because of remedial work, larger college attendance, etc.) the strength of the efficiency argument appears reinforced.

Advocates of these views have often argued in terms which suggest that efficiency and equity goals are, to a greater or lesser extent, mutually exclusive.[3] This paper is an attempt to show that conflict between efficiency and equity considerations is more a function of the extant institutional (including methods of financing) restraints of the system than of inherent conflicts in the goals themselves.

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3 Stephen A. Hoenack, "The Efficient Allocation of Subsidies to College Students," American Economic Review, Vol. 61 (June, 1971), pp. 302-311, states the problem even more simply, i.e., as a conflict between enrollment and equity goals. The Hoenack paper has an institutional rather than system viewpoint, however.

The semantic difficulties of this conflict should be resolved at the outset. "Efficiency" simply refers to the least-cost means of achieving a specified goal. The greatest hardship which educational researchers operate under is the lack of a clear specification of the goals of our educational systems. These "goals" need to be stated in clear operational terms rather than in the form of vague generalizations or homilies.[4]

This impreciseness of definition of goals has led economists into the use of proxy definitions. The most common one has been the private rate-of-return to investment in education. The researcher, allowed certain liberties of assumption, has been able to set up this "return" criterion as the alternative to the equity criterion. The rate-of-return technique has several inherent weaknesses, however.

Private rate-of-return analysis, for example, need not concern itself with why increased education leads to increased lifetime income. Socially, the question of the intervening effect on productivity is quite vital. If education leads to greater income only because of the certification aspects of the process, it is quite possible that certification can be achieved in other ways.

Another weakness of rate-of-return analysis has been its failure to take into account the non-cognitive outcomes of education. Herbert Gintis has noted that ". . . the lack of understanding on non-cognitive outcomes of education has led economists consistently to

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4 Douglas M. Windham, "Politics, Incentives, and a Social Choice Model of Education: A Survey of Research Needs," prepared as an appendix to Mary Jean Bowman, Educational Outcomes, Processes, and Decisions (A report for the National Institute of Education Planning Unit), suggests ways to resolve the problem of goal definition.

misstate the interactions and performance of education . . ." and that such ". . . mishandling of the outcomes of education vis-a-vis the economy vitrates much of the concrete policy-oriented analysis of economists."[5] These and other comments do not demean the value of rate-of-return studies; they only suggest the improper emphasis which has existed and persists in the present.

T. W. Schultz has emphasized that evidence exists to support the hypothesis that college students are quite efficient in making private educational decisions.[6] The continuance of inefficiencies and/or inequities appears largely attributable to the organization of the higher educational system. It must be emphasized that higher education in its present form, whether public or private, is an unavoidably inequitable institution. The pool of high school graduates from which the system draws its students is itself a manifestation of earlier inequities.

The inequality of measured ability, which is a product of home environment, other pre-school experience, and the pre-college educational system, is such that serious class inequities already exist in terms of who graduates from high school. One may feel safe with the assumption that the original group with sufficient innate ability to eventually benefit from post-secondary education greatly exceeds

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5 "Non-Cognitive Outcomes of Schooling: Priorities for Research in the Economics of Education," prepared as appendix to Bowman - NIE paper, p. 1.

6 Schultz, p. 38.

the group whose acquired intellectual abilities, receipt of information concerning opportunities, and ability to pay for education allows the group members to continue education beyond high school.

Finally, the traditional means of admission selection and educational finance are such that, even among the cohort of high school graduates, attendance continues to be an increasing function of income. With attrition rates which are higher for low-income students, the final products of the higher educational system must disproportionately represent higher income groups. The work of Hansen and Weisbrod in California and Windham in Florida has emphasized that the inequities of the public expenditures for higher education are compounded by the existing inequities in the tax systems which support these expenditures.[7]

This paper will make use of data from the 1970-1971 survey of North Carolina high school seniors to examine the effects upon equity and efficiency which may be expected from a continuation of traditional selection and financing methods. There will follow the presentation of an alternative program of student assistance, with an emphasis upon full-cost tuition with financial need fully funded by long term loans.

It must be recognized that such a system of educational finance removes all implicit subsidies. If loan repayment is also unsubsidized, the effect of these financing innovations is to convert higher education into a quasi-private good. A special section of the paper

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7 W. Lee Hansen and Burton A. Weisbrod, Benefits, Costs, and Finance of Public Higher Education (Chicago: Markham Publishing Company, 1969) and Douglas M. Windham, Education, Equality, and Income Redistribution (Lexington, Mass.: Heath-Lexington Publishers, 1970).

will discuss the question of the social benefits of higher education and how they should enter into the financing process. The effect of the new program upon private institutions will also be explored.

FINANCIAL NEED IN NORTH CAROLINA

This section will make use of the report, Financial Aid Need Models and Illustrations for North Carolina. The report was Study V of the North Carolina Financial Aid Studies conducted by the Southern Regional Office (Atlanta) of the College Entrance Examination Board. The study was performed for North Carolina students attending North Carolina institutions. The nine student groups studied were:

A. White undergraduates at public four-year institutions
B. Nonwhite undergraduates at public four-year institutions
C. White students at public two-year institutions
D. Nonwhite students at public two-year institutions
E. White undergraduates at private four-year institutions
F. Nonwhite undergraduates at private four-year institutions
G. White students at private two-year institutions
H. Nonwhite students at private two-year institutions
I. White and nonwhite students at proprietary institutions

In order to calculate the financial aid needs for a currently enrolled student in North Carolina, it is necessary to determine three factors:

1. Expected student contributions or self-help. A student can himself meet some of the expenses of attending a post-secondary institution through earnings from summer or term-time jobs.

2. Expected parental contributions to meet educational expenses. These expected contributions are based upon a family's income, assets, number of dependents, and other circumstances.

3. Expected out-of-pocket costs or total budgeted expenses for students at the institutions they plan to attend. These are the money costs to the student of attending a post-secondary institution and they will vary according to the type of school and whether an individual is a resident, commuter, full, or part-time student.

The application of these factors to the case of a particular student is very straightforward. The financial aid administrator at the student's institution begins with the appropriate budgeted expenses for the particular institution with adjustments for any unusual expenses unique to that student. From these he subtracts expected parental contribution, other sources of financing, and student self-help for this particular student. The result is a calculation of financial need tailored to the individual student. Some students have no demonstrable need, while others with unusual problems may have need for funds to cover all expenses.

The same type of calculation can be made for students in the aggregate. Average values for student self-help and parental contribution are substituted for the particular amounts used in determining the need of individual cases. The average values for student self-help are assumed to be the same for all students. The prime determinants of parental contribution are family income and family size. Differences in family income among students are taken into account by using the observed income distribution of students' families.

For each interval in the income distribution, estimated average need per student can be calculated. Total need for the students from families in this interval of the income distribution is the product of the number of students therein times the estimated average need per student. Aggregate need for all students is the sum of the total need for each of the intervals of the income distribution in which student self-help and expected parental contribution are less than the budgeted expenses.

The tables which follow present the estimates of budget costs, expected parental contributions, and assumed student self-help for each of the nine student groups. Total need is calculated for each of seven income intervals as well as for the total group. Tables 10 and 11 provide useful summaries for all nine groups.

Consistantly, the higher income groups are shown to generate a "need surplus", i.e., their ability to pay exceeds their costs.[8] For those attending public institutions, a major factor contributing to such a surplus is the subsidy of tuition which all students enjoy, regardless of evidence of need.

The effect of reducing the implicit tuition subsidy may be seen in Tables 12 and 13. In Table 12 tuition is increased by $500 at public four-year institutions and $200 at public two-year institutions. In Table 13 the respective tuition increases are $1,000 and $400. The latter tuition amounts approximate the conservative estimates of the full student subsidy. Table 13 is an approximation of the need calculation for a full-cost tuition model. The effect in both cases, where the tuition revenue is assumed to be used for need based grants, is to reduce net total need by almost $8 million dollars for the smaller tuition increases and over $13 million dollars for the larger tuition increases.

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8 The problem is compounded when one considers that present parental contribution rates within the College Scholarship Service (CSS) aid system are progressive only to the $12,000 range. The adjustment of these rates, with an aim toward greater progressivity, is presently under consideration by the CSS Committee on Need Assessment Procedures.

Table 1

Public Four-Year Institutions -
White Undergraduates: 1970-1971
N=42,183

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	3	$ 2,127,025	$ -	$ 581,900	$ 1,545,125
$ 4,000 to $ 5,999	9	6,383,090	-	1,746,200	4,636,890
$ 6,000 to $ 7,999	11	7,869,440	1,508,000	2,134,400	4,227,040
$ 8,000 to $ 9,999	22	15,738,880	5,614,400	4,268,800	5,855,680
$10,000 to $12,999	28	20,031,485	13,996,035	5,433,100	602,350
$13,000 to $14,999	11	7,869,440	7,934,400	2,134,400	(- 2,197,360)
Over $14,999	16	11,446,275	20,247,000	3,104,500	(-11,905,225)
Total	100%	$71,465,635	$49,299,835**	$19,403,300**	$16,867,085*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the two highest income groups.

Table 2

Public Four-Year Institutions - Nonwhite Undergraduates: 1970-1971
N=11,710

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	42	$ 7,226,920	$ -	$2,198,300	$5,028,620
$ 4,000 to $ 5,999	23	3,957,350	-	1,203,800	2,753,550
$ 6,000 to $ 7,999	18	3,126,110	-	942,300	2,183,310
$ 8,000 to $ 9,999	9	1,563,190	542,810	471,100	549,280
$10,000 to $12,999	6	1,042,630	636,215	314,200	92,215
$13,000 to $14,999	1	173,430	171,405	52,300	(- 50,275)
Over $14,999	1	173,430	351,000	52,300	(-229,870)
Total	100%	$17,263,060	$1,701,430**	$5,234,300**	$10,607,475*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the two highest income groups.

Table 3

Public Two-Year Institutions -
White Students: 1970-1971
N=27,058

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	12	$ 3,807,175	$ -	$ 1,516,300	$ 2,290,875
$4,000 to $ 5,999	17	5,393,500	-	2,148,200	3,245,300
$ 6,000 to $ 7,999	20	6,406,500	1,758,900	2,527,400	2,120,200
$ 8,000 to $ 9,999	16	5,124,375	3,268,395	2,021,600	(- 165,620)
$10,000 to $12,999	20	6,406,500	6,413,220	2,527,400	(- 2,534,120)
$13,000 to $14,999	8	2,562,875	4,026,900	1,011,100	(- 2,475,125)
Over $14,999	7	2,242,000	5,682,000	884,500	(- 4,324,500)
Total	100%	$31,942,925	$21,149,415**	$12,636,500**	$ 7,656,375*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the four highest income groups.

Table 4

Public Two-Year Institutions - Nonwhite Students: 1970-1971
N=3,655

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	44	$ 1,885,425	$ -	$ 733,200	$ 1,152,225
$ 4,000 to $ 5,999	25	1,071,575	-	416,800	654,775
$ 6,000 to $ 7,999	13	562,225	109,250	216,600	236,375
$ 8,000 to $ 9,999	9	389,375	184,240	150,000	55,135
$10,000 to $12,999	4	172,850	149,650	66,600	(- 43,400)
$13,000 to $14,999	4	172,850	228,490	66,600	(- 122,240)
Over $14,999	1	43,900	111,000	16,900	(- 84,000)
Total	100%	$ 4,298,200	$ 782,630**	$ 1,666,700**	$ 2,098,510*

*Total aid needed; not affected by minus amounts.
** These figures contain contributions which exceed the amount needed by the three highest income groups.

Table 5

Private Four-Year Institutions - White Undergraduates: 1970-1971
N=15,660

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	5	$ 2,110,740	$ -	$ 356,300	$ 1,754,440
$ 4,000 to $ 5,999	7	2,954,930	-	498,700	2,456,230
$ 6,000 to $ 7,999	7	2,986,280	613,760	498,700	1,873,820
$ 8,000 to $ 9,999	17	7,252,790	2,209,460	1,211,200	3,832,130
$10,000 to $12,999	24	10,238,500	4,829,030	1,709,900	3,699,570
$13,000 to $14,999	12	5,065,670	9,395,000	854,900	(-5,184,230)
Over $14,999	28	11,946,790	13,155,000	1,995,200	(-3,203,410)
Total	100%	$42,555,700	$30,202,250**	$7,124,900**	$13,616,190*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the two highest income groups.

Table 6

Private Four-Year Institutions -
Nonwhite Undergraduates: 1970-1971
N=2,829

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	46	$ 3,065,240	$ -	$ 572,400	$ 2,492,840
$ 4,000 to $ 5,999	23	1,533,840	-	286,400	1,247,440
$ 6,000 to $ 7,999	15	1,007,680	110,240	186,600	710,840
$ 8,000 to $ 9,999	8	537,160	153,680	99,400	284,080
$10,000 to $12,999	6	406,320	201,450	74,800	130,070
$13,000 to $14,999	1	66,640	47,880	12,300	6,460
Over $14,999	1	66,640	84,000	12,300	(- 29,660)
Total	100%	$ 6,683,520	$ 597,250**	$ 1,244,200**	$ 4,871,730*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the highest income group.

Table 7

Private Two-Year Institutions - White Students: 1970-1971
N=4,756

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)- (2)+(3) Total Need
Under $4,000	6	$ 481,780	$ -	$ 129,700	$ 352,080
$ 4,000 to $ 5,999	10	804,440	-	216,600	587,840
$ 6,000 to $ 7,999	13	1,060,280	160,680	281,200	618,400
$ 8,000 to $ 9,999	7	571,220	226,440	151,500	193,280
$10,000 to $12,999	26	2,124,720	1,465,845	562,800	96,075
$13,000 to $14,999	6	489,060	487,350	129,700	(- 127,990)
Over $14,999	32	2,611,960	45,660,000	692,500	(-43,740,540)
Total	100%	$8,143,460	$48,000,315**	$ 2,164,000**	$ 1,847,675*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the two highest income groups.

Table 8

Private Two-Year Institutions - Nonwhite Students: 1970-1971
N=314

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	44	$208,870	$ -	$ 63,300	$145,570
$ 4,000 to $ 5,999	25	118,645	-	36,300	82,345
$ 6,000 to $ 7,9999	13	63,015	10,660	18,800	33,555
$ 8,000 to $ 9,	9	42,710	19,040	12,900	10,770
$10,000 to $12,999	4	19,700	15,405	6,000	(-1,705)
$13,000 to $14,999	4	19,700	22,230	6,000	(-8,530)
Over $14,999	1	4,360	9,000	1,400	(-6,040)
Total	100%	$477,000	$76,335**	$144,700**	$272,240*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the three highest income groups.

Table 9

White and Nonwhite Students at Proprietary Institutions: 1970-1971
N=9,156

Income Interval	Percent of N	(1) Total Budget Costs	(2) Total Parental Contribution	(3) Total Student Self-Help	(1)-[(2)+(3)] Total Need
Under $4,000	16	$1,392,700	$ -	$ 659,250	$ 733,450
$ 4,000 to $ 5,999	18	1,565,600	-	741,600	824,000
$ 6,000 to $ 7,999	19	1,653,000	548,100	783,000	321,900
$ 8,000 to $ 9,999	15	1,305,300	1,016,020	617,850	(- 328,570
$10,000 to $12,999	18	1,565,600	1,944,640	741,600	(-1,120,640)
$13,00 to $14,999	8	695,400	1,346,880	329,400	(- 980,880)
Over $14,999	6	522,500	1,647,000	247,050	(-1,371,550)
Total	100%	$8,700,100	$6,502,640**	$4,119,750**	$1,879,350*

*Total aid needed; not affected by minus amounts.
**These figures contain contributions which exceed the amount needed by the four highest income groups.

Table 10

Need Gaps by Income Level
and Student Groups

Income Interval	Public 4-Year	Public 2-Year	Private 4-Year	Private 2-Year	Proprietary Schools	Total	Percent of Total	Cumulative Percentage
I. Under $4,000	$ 6,573,745	$3,443,100	$ 4,247,280	$ 497,650	$ 733,450	$15,495,225	25.9	25.9
II. $ 4,000 - $ 5,999	7,390,440	3,900,075	3,703,670	670,185	824,000	16,488,370	27.6	53.5
III. $ 6,000 - $ 7,999	6,410,850	2,356,575	2,584,660	651,955	321,900	12,325,940	20.6	74.1
IV. $ 8,000 - $ 9,999	6,404,960	55,135	4,116,210	204,050	-	10,780,355	18.1	92.2
V. $10,000 - $12,999	694,565	-	3,829,640	96,075	-	4,620,280	7.7	99.9
VI. $13,000 - $14,999	-	-	6,460	-	-	6,460	-*	99.9
VII. Over $14,999	-	-	-	-	-	-	-	99.9
Total	$27,474,560	$9,754,885	$18,487,920	$2,119,915	$1,879,350	$59,716,630	99.9	99.9

*Less than 0.1 percent
Percents total to less than 100 percent because of rounding.

Table 11

Undergraduate Per Student Financial Need in North Carolina for 1970-1971 by Race and Institution

Student Group	Income Interval: Under $4,000	$4,000 to $5,999	$6,000 to $7,999	$8,000 to $9,999	$10,000 to $12,999	$13,000 to $14,999	$15,000 and Above	Average amount of assistance required by students who demonstrate need
Whites at Public 4-Year	$1,221	$1,221	$ 911	$ 631	$ 50	$ -	$ -	$ 548
Nonwhites at Public 4-Year	1,022	1,022	1,035	521	131	-	-	924
Whites at Public 2-Year	705	705	391	-	-	-	-	577
Nonwhites at Public 2-Year	716	716	497	167	-	-	-	630
Whites at Private 4-Year	2,240	2,240	1,709	1,439	984	-	-	1,449
Nonwhites at Private 4-Year	1,916	1,916	1,676	1,256	765	230	-	1,739
Whites at Private 2-Year	1,235	1,235	1,000	580	77	-	-	626
Nonwhites at Private 2-Year	1,050	1,050	818	384	-	-	-	951
Students at Proprietaries	500	500	185	-	-	-	-	387

Table 12

Effects of Tuition Increases at
Public Institutions #1: 1970-1971

Student Group	Original Total Need	Need After Tuition Increase	Increase in Revenue	Net Total Need
Whites at Public Four-Year	$16,867,085	$32,383,725	$21,091,500	$11,292,225
Nonwhites at Public Four-Year	10,607,475	16,353,700	5,855,000	10,498,700
Whites at Public Two-Year	7,656,375	11,008,355	5,411,600	5,596,755
Nonwhites at Public Two-Year	2,098,510	2,763,710	731,000	2,032,710
Whites at Private Four-Year	13,616,190	13,616,190	-	13,616,190
Nonwhites at Private Four-Year	4,871,730	4,871,730	-	4,871,730
Whites at Private Two-Year	1,847,675	1,847,675	-	1,847,675
Nonwhites at Private Two-Year	272,240	272,240	-	272,240
Proprietaries	1,879,350	1,879,350	-	1,879,350
Total	$59,716,630	$84,996,675	$33,089,100	$51,907,575

$500 increase in Public Four-Year

$200 increase in Public Two-Year

Table 13

Effects of Tuition Increases at
Public Institutions #2: 1970-1971

Student Group	Original Total Need	Need After Tuition Increase	Increase in Revenue	Net Total Need
Whites at Public Four-Year	$16,867,085	$ 50,099,725	$42,183,000	$ 7,916,725
Nonwhites at Public Four-Year	10,607,475	22,150,200	11,710,000	10,440,200
Whites at Public Two-Year	7,656,375	14,525,955	10,823,200	3,702,755
Nonwhites at Public Two-Year	2,098,510	3,443,910	1,462,000	1,981,910
Whites at Private Four-Year	13,616,190	13,616,190	-	13,616,190
Nonwhites at Private Four-Year	4,871,730	4,871,730	-	4,871,730
Whites at Private Two-Year	1,847,675	1,847,675	-	1,847,675
Nonwhites at Private Two-Year	272,240	272,240	-	272,240
Proprietaries	1,879,350	1,879,350	-	1,879,350
Total	$59,716,630	$112,706,975	$66,178,200	$46,528,775

$1,000 increase in Public Four-Year

$400 increase in Public Two-Year

It appears quite likely that there will be a continuation of the present federal policy of restricting aid awards to those students with lowest incomes. If the available federal monies are allocated in such a way for the North Carolina system, an interesting situation develops. As Tables 14 and 15 illustrate, financial need (from the State viewpoint) becomes a middle-class problem. Low-income students who make it to college have first call on federal funds while high-income students do not require aid. This phenomenon has already become quite apparent to middle-income parents.

A concurrent study of available funds for student assistance in North Carolina estimated that $75.5 million of financial aid existed to help meet the actual amounts of need.[9] Unfortunately, only $25.6 million of the $75.5 million was available on the sole or primary basis of evidenced need. The remaining funds were allocated on bases which either ignored need or used need as a non-primary determinant. This evidence serves as a strong indictment of the present financial aid system in higher education.

Before proceeding to the presentation of an improved plan for the financing of higher education, a discussion of the social benefits of higher education appears to be in order.

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[9] "The Study of Available Student Financial Aid Resources in North Carolina", Study II of the North Carolina Financial Aid Studies, p. 14.

Table 14

Unmet Need After Allocation of Specified
Federal Aid Funds to Lowest Income Groups

Student Group	Income Interval: Under $4,000	$4,000 to $5,999	$6,000 to $7,999	$8,000 to $9,999	$10,000 to $12,999	$13,000 to $14,999	$15,000 and Above	Total
Public Four-Year	$ -	$ 5,600,785	$ 6,410,850	$ 6,404,960	$ 694,565	$ -	$ -	$19,111,160
Public Two-Year	2,350,629	3,900,075	2,356,575	55,135	-	-	-	8,662,414
Private Four-Year	-	1,554,963	2,584,660	4,116,210	3,829,640	6,460	-	12,091,933
Private Two-Year	-	215,856	651,955	204,050	96,075	-	-	1,167,936
Proprietaries	550,835	824,000	321,900	-	-	-	-	1,696,735
Total	$2,901,464	$12,095,679	$12,325,940	$10,780,355	$4,620,280	$6,460	$ -	$42,730,178

Table 15

Per Student Financial Need After Allocation of
Specified Federal Aid Programs to Lowest Income Groups

Student Group	Income Interval: Under $4,000	$4,000 to $5,999	$6,000 to $7,999	$8,000 to $9,999	$10,000 to $12,999	$13,000 to $14,999	$15,000 and Above	Average amount of assistance required by students who demonstrate need
Public Four-Year	$ -	$863	$ 950	$ 620	$ 56	$-	$ -	$ 530
Public Two-Year	484	707	400	12	-	-	-	414
Private Four-Year	-	890	1,700	1,425	975	3	-	1,009
Private Two-Year	-	389	989	565	77	-	-	413
Proprietaries	376	500	185	-	-	-	-	350

THE SOCIAL BENEFITS OF PUBLIC HIGHER EDUCATION

The question of the social benefits of education is certain to arise as a result of any discussion of removing general subsidies from college students. This can be dealt with at several levels. First, the existence of social benefits remains exceedingly uncertain.[10] One can easily attack the implicit assumption, made by zero-tuition advocates, that these hypothetical externalities equal or exceed the full instructional costs of a college education. That the instructional component of higher education is not a public good in the economic sense of the term has been stressed by Schultz.[11]

Even if one assumes the existence of social benefits in some form, their inadequate delineation prevents a quantification which could be used as a basis for student subsidies. There is presently no secure way of arriving at a dollar amount which should be paid to the student to reimburse him for the stream of social benefits he will be expected to generate.

Also, no one argues that these social benefits are produced only during the years of actual college attendance. Rather, the benefits are assumed to accrue over the graduates' lifetimes. It would seem

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10 Comments that the college graduate is a "better" citizen or more "open-minded" suffer not only from lack of statistical verification. The "benefits" are too subjective to serve well as policy variables. It is unlikely a finding that college graduates are more likely to vote as Democrats will be seen as a "social benefit" by a Republican administration.

11 Schultz, p. 36.

more appropriate to determine the potential activities (working in inner-city areas, engaging in a particular profession) of the college graduate which are socially beneficial and incorporate the assumed value of the benefits into the remuneration for such activities.

The early failure of teacher-training scholarships in many states suggests that the funds might have been better spent in offering better pay to teachers. Similar conclusions would probably be reached in an examination of other such incentive subsidies. Finally, given the current employment problems of college graduates, the marginal social benefit from an increase in their number may be expected to be rather low. Economic efficiency does not require that social benefits be internalized unless the failure of society to pay for such benefits will reduce their production. The private benefits of a higher education are such that, even without a subsidy, it may be safely assumed that most students, and especially those from higher income families, will receive an education and continue to generate the hypothetical social benefits.

Provided with more adequate financial aid by the funds no longer needed to subsidize wealthier students, low-income students may be expected to increase their consumption of education. This should increase the total production of any social benefits which may exist. Even students who shift from public to private institutions because of a reduction in tuition differentials, would still produce social benefits unless one makes the improbable assumption that such benefits are characteristic only of public education. In conclusion, the existence of beneficial externalities from the production of college graduates is uncertain; their manner and extent await elaboration even

if they do exist; and, if they are specified objectively, by themselves, they still do not constitute an adequate justification for public subsidies of the educational process.

FINANCING UNDERGRADUATE EDUCATION: A PROPOSAL FOR CHANGE

The program to be proposed here is one that certainly should not appear revolutionary except to those who are satisfied with the present performance of higher education. The danger of any proposal which appears to solve too many problems too easily is that it will be passed over as "imaginative but impractical." Higher education cannot afford the luxury of such intellectual conservatism. If efficiency and equity are to be served in higher education, proposals such as this one should be considered.

The basic framework of the suggested program consists of:

1. undergraduate tuition equal to the full instructional costs calculated separately at each public institution;

2. the creation of a quasi-public body with authority to issue bonds so as to accumulate sufficient potential student loan funds; and

3. the granting of loans to students at full interest expense with optional repayment periods extending to a minimum of twenty-five years.

Loans would be available to every full time student in an amount equal to full tuition and special fees, a realistic maintenance allowance, and some compensation for the student's foregone earnings. The need for and the effects of each of these changes will be elaborated upon below.

The need for full-cost tuition is a result of the impropriety of implicit subsidies through the tuition charge. The reason for having tuition differentials among individual public institutions is that such a pricing system increases the ability of the student to compare private benefits and costs in his attendance decision. There is certainly good reason why the institutions presently classified as public are not homogeneous even within a given state. This variety is a quite appropriate part of market operations, especially when attended by an adequate provision of information about the differences of quality and cost. The inadequate collection and distribution of such information is another of the serious problems faced by consumers of education. Also, it is inequitable to charge the average system-wide cost at each institution because students at less expensive public institutions would pay more than their share while students at the more expensive state schools would receive a new form of subsidy.

If enrollment is not to be adversely affected by increased tuition, the capital market must be simultaneously expanded. The student loan authority would pay full market rates in selling its bonds.[12] The requirement that the authority be self-sustaining is obvious if the need for public subsidies is to be avoided.

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12 If the authority wished to exploit a continuance of public sentimentality toward higher education it could use an approach similar to that of the federal government in selling savings bonds. Such a technique would be unfortunate in that it involves exploitation of consumer ignorance and in any case, could not be carried on in a wide enough scale to fund the complete program.

A major innovation in this program is the elimination of the need-determination process in granting loans. As all borrowers pay full market interest, there is no requirement that the monies be restricted for the "needy". It appears legitimate to view higher education as consisting of students who are potentially wealthier than non-users of the system. This potential wealth should both qualify them for the loan as well as remove the need to subsidize their education. It is important to note that this concept of "potential wealth" should qualify many more minority/poverty students for loans than qualify within the present capital market.

There are two advantages from avoiding the need-determination process. The first is simply the administrative expense which such a system involves. The second advantage lies in the present unavoidable weaknesses of need-determination.[13] Need is usually estimated by determining the contribution which a student and his family are expected to make toward educational expenses. Agencies such as the College Scholarship Service and the American College Testing Program have several techniques for doing this, but none rely primarily upon the student's lifetime income expectations. The need-determination process, in its present form, is especially weak in that reporting of family income is not certain; the parental contribution rates appear most severe for low and middle-income parents; the parents' willingness

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13 The recently published report of the Cartter Panel on Student Financial Need Analysis, New Approaches to Student Financial Aid, deals in detail with the form and extent of these weaknesses.

to pay may differ sharply from their calculated expected contribution;[14] there is a strong incentive for the student to appear independent from his family, whether or not he is in fact financially independent of them; and the amount of the student's personal contribution from earnings is often unrealistic, especially for low-income youths.

The problem of financial assistance for out-of-state students would be eliminated under a full-cost tuition plan since, with no public subsidy, there would be no reason to discriminate against them. With the removal of tuition rates which help discourage a student from going to college in another state, an increasingly heterogeneous student body might evolve. Such heterogeneity has been viewed as favorable in the past.

It may be assumed with some degree of certainty that the private benefits of higher education are sufficient that students will continue to avail themselves of higher education if they are able to efficiently finance the expense of such an education. Obviously, it is presently impossible to predict how students will react to new loan programs. It may be necessary for a public agency to support the loan program through repayment guarantees until the risks become more determinable. Reluctance to make long term loans to college students is probably strongly reinforced by the paucity of experience in this area of the capital market. The most important research question which remains is the adequacy of the capital market to handle the large scale increase

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[14] See James L. Bowman, "Some Thoughts and Reflections Regarding Parental Ability to Pay for Higher Education," Educational Testing Service, 1970.

in loan funds which this program would entail.

The fact exists that certain parents already have the opportunity to pay for their child's education over an extended period. In addition to equity considerations, the extension of such an alternative to all students who wish to borrow appears necessary if the reluctance toward rational indebtedness is to be avoided. Such a reluctance can be expected to be especially characteristic of low-income families.

With a financing program of the type discussed here, the public institutions of higher education would no longer be dependent upon legislative grants. Such institutions would probably continue to be governed by state-appointed trustees, but this should not prevent them from being more innovative than they have been under the present system. Private colleges would gain students from the public institutions, but only to the extent that they offer programs attractive to the prospective student. This program of tuition and loans would not be a panacea for those private schools whose problems stem from an unwillingness or inability to offer a marketable good, i.e., a useful education. The private colleges which deserve (by the market test) to continue would be helped. Where other private institutions fail, they will not be able to place the blame upon unfair price competition from the public system.

Another advantage which this program has over both the present system and other suggested alternatives is that it allows greater student independence without totally removing the parents' incentive to help their children. A child is no longer restricted in his decision to enter college by his parents' inability or unwillingness to pay for all or a part of his child's expenses as he is with any other economic activity of the child. Those who wish to free their child of a

potential loan obligation or to provide him with a higher standard of living while in college will be able to do so.

Most will probably recognize that the effect of this program would be to produce college graduates with various debt burdens and that the size of the burdens would be an inverse function to current family income.[15] To the extent that college graduates are recipients of higher lifetime incomes this effect is less of an equity problem. It is simply an unfortunate fact that higher education, is an institution peculiarly unsuited to egalitarian objectives.[16] The cohort from which higher education draws students has already been biased in favor of higher income classes by the effects of the pre-school environment and primary and secondary school experience. The fact that the proposed tuition/loan program would eventually release millions of dollars, which each state could invest in its pre-college educational systems, is a significant long run benefit which should significantly increase

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15 A special problem that is sometimes mentioned is the negative doweries for women which might result from such a plan. T. W. Schultz and others have noted favorable effects upon children from a college education for the mother. Whether the educational expenditure is consumption or investment, the female graduate, either singly or with a husband, has no reason to expect the expenditure to be subsidized. If the expenditure can not be justified on the basis of private benefits, it should not be initiated.

16 See Windham (1970), pp. XIII-XIV.

the future equality of educational opportunity.[17]

So there is little to grieve for in the passing of the present financial aid system. Financial aid administrators, relieved of the mundane tasks of need determination and matching grants with particular students, would be able to concentrate on the more important tasks of general financial and educational counseling as well as to devote their energies into secondary authorities in the vital field of student economics.

The key points of debate which may be anticipated are whether adequate loan programs can be established to meet the needs of present and new users of higher education and what the final long run equity effects of the program will be. Given that large amounts of grants (either overt or in the form of tuition subsidies) already exist, the problem of supplying adequate loans should not prove unnecessarily difficult. The long run equity effects should be favorable as the user group consists of a more proportional representation from all income groups and non-users are no longer required to subsidize users.

RESOLVING THE EFFICIENCY/EQUITY QUANDARY

The main results and conclusions of an examination of public subsidization of higher education and specifically of subsidization

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17 T. W. Schultz, "Human Capital: Policy Issues and Research Opportunities," unpublished, pp. 36-38, notes that the rates of return appear greatest for investments in the early grades. The effect of improved pre-school training may offer even higher rewards. With more equitable pre-college training, higher education would not be as inherently inequitable itself.

through general subsidies and non-need based awards are as follows:

1. A continuance of the present system of higher education is socially inefficient and inequitable;

2. Implicit subsidies and the inefficient financial aid process work to the social and private disadvantages of low-income groups;

3. Making all public subsidies explicit and based upon need will increase equity but continue the inefficiency of social investment;

4. An adequate program of higher educational finance based on loans makes the question of "social benefits" irrelevant; and

5. Full-cost tuition with provision for long-term loans will result in a system both more equitable and more efficient than any present alternative.

An earlier warning should be repeated. It is too easy to view with skepticism a plan which offers too facile a solution to a serious problem. The proposal here represents the culmination of extended study by many social scientists. It is not "costless", but objective examination should reveal that its faults are overwhelmingly outweighed by its merits. The comments of Daniere about his early proposal of restructuring educational finance are applicable here. He remarked that those who "like to refer to the 'great American tradition of free and universal education' . . . ignore another more fundamental-tradition, which emphasizes individual choice and individual risk-taking . . . ."[18] This paper has attempted to show how higher education might become part of this latter tradition with a minimum of difficulties and hazards.

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[18] Andre Daniere, Higher Education in the American Economy (New York: Random House, 1964), p. 128.